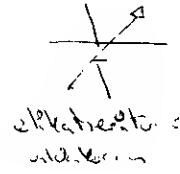
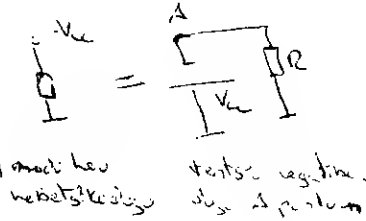
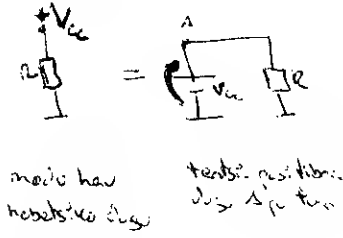


$$V_{A3} = V_A - V_B$$

- Elektrische Größe: nie negative abhaken die haben keine
negative Werte es hat keine.

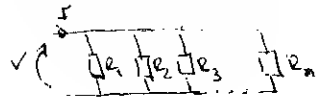
* Leberungs: aufpassen je nach polen des
Bogens: aufpassen je nach art des

→ Batterien



ERRESISTENZEN ELKREKETA

→ Elkreketen parallel → Resistentien teilt sich alle? Konstante der

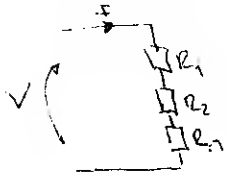


Simplekreketen, Resistentien
bedeutet Widerstand R_0 .

$$\frac{1}{R_0} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots + \frac{1}{R_n}$$

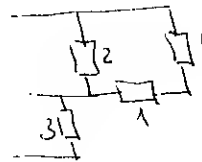


→ Elkreketen seriell →



$$R_0 = R_1 + R_2 + R_3 + \dots + R_n$$

Abbildung



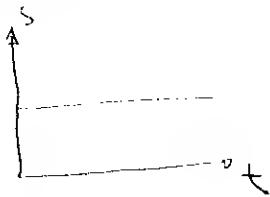
$$1 + 1 = 2$$

$$\frac{1}{2} + \frac{1}{2} = 1$$

$$1 + 3 = 4$$

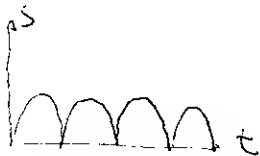
SEKNAEKE

→ Seknale linear/gerade → bei no andere aldrten die seknale elektriken.



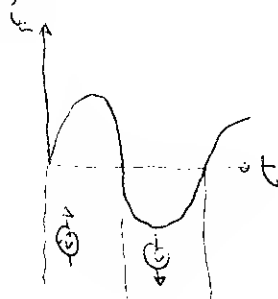
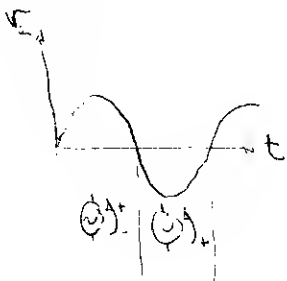
= konstanten $\frac{1}{t}$ Bei der best, elektriken, seknale konstanten erstein di.

$$s = [J, V, P]$$

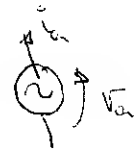


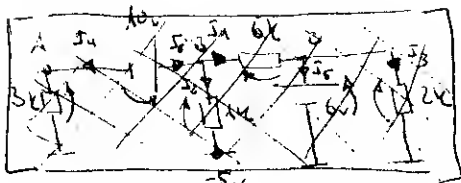
= pulsieren

→ Seknale alternen → bei negativen aldrten die seknale elektriken



= sinusoidal





$$B \rightarrow I_1 - I_2 - I_3 = 0$$

$$C \rightarrow I_2 - I_4 - I_5 = 0$$

$$3I_1 - 10 + 1I_3 + (-5) = 0$$

$$3I_1 - 10 - 6I_2 - 6 = 0$$

$$6 - 2I_5 = 0$$

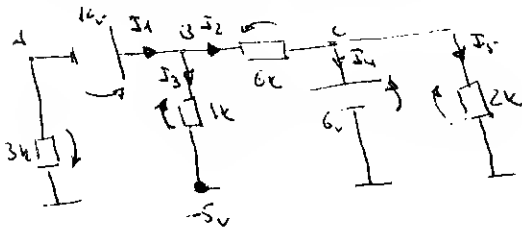
$$I_1 = 3.44 \text{ mA}$$

$$I_2 = -1.04 \text{ mA}$$

$$I_3 = 4.45 \text{ mA}$$

$$I_4 = -1.61 \text{ mA}$$

$$I_5 = 3 \text{ mA}$$



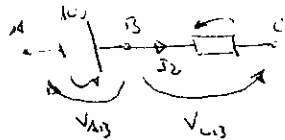
$$V_A? \quad V_B? \quad V_C?$$

$$V_A = -3 \cdot I_1 = -3 \cdot 3.44 = -10.44 \text{ V}$$

$$V_B = 1I_3 - 5 = 1 \cdot 4.45 - 5 = -0.45 \text{ V}$$

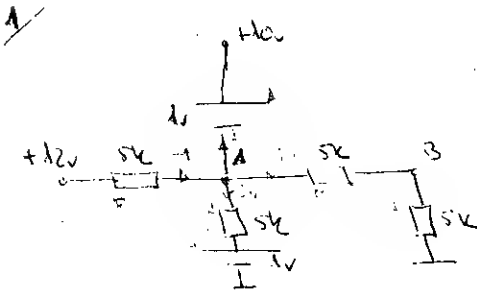
$$V_C = 2I_5 = 6 \text{ V}$$

$$V_{AB}? \quad V_{BC}?$$



$$V_{AB} = -10 - V_A - V_B = 10 - (-10.44) - (-0.45) = -10 \text{ V}$$

$$V_{BC} = -6I_2 = -6(-1.04) = 6.44 \text{ V} \quad V_C - V_B = 6 - (-0.45) = 6.44 \text{ V}$$



$$I_1 = I_2 + I_3 + I_4$$

$$V_A = 9 \text{ V}$$

$$V_B = 4.5 \text{ V}$$

$$10 - 1.5I_4 - 1.0$$

$$10 - 1.5I_3 - 6I_3 = 0$$

$$10 - 1 + 6I_4 - 12 = 0$$

$$I_4 = 5/6$$

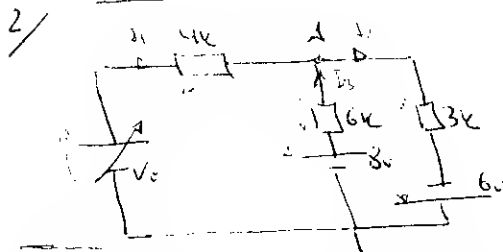
$$I_3 = 1/6$$

$$I_2 = 2/3$$

$$I_2 + I_3 - I_4 = \frac{2}{3} + \frac{1}{6} - \frac{5}{6} = \frac{4}{6} - \frac{5}{6} = -\frac{1}{6}$$

$$V_A \begin{cases} 5I_3 + 5I_2 = \frac{5}{2} + \frac{5}{2} = 5 \text{ V} \\ -5I_1 + 12 = 9 \text{ V} \\ 5I_4 + 1 = 8 + 1 = 9 \text{ V} \end{cases}$$

$$V_B \begin{cases} 5I_3 = \frac{5}{2} = 2.5 \text{ V} \\ -5I_3 - 5I_1 + 12 = 4.5 \text{ V} \\ -5I_3 + 5I_4 + 1 = -\frac{5}{2} + 8 + 1 = 4.5 \text{ V} \end{cases}$$



$$V_A = 0.3V_C = 0.88$$

$$3I_2 - 6 = 3\left(\frac{46}{24} + \frac{V_C}{6}\right) - 6 = 0.8' + 0.3'V_C$$

$$-6I_3 + 8 = -6\left(\frac{46}{24} - \frac{V_C}{6}\right) + 8 = -0.8' + 0.3'V_C$$

$$-4I_1 + V_C = -4\left(\frac{46}{24} + \frac{V_C}{6}\right) + V_C = -0.8' + 0.3'V_C$$

$$I_3 = \frac{5}{24} - \frac{V_C}{18} = \frac{46}{24} - \frac{V_C}{18}$$

$$I_1 = \frac{14}{3} - 3I_3$$

$$I_2 = I_1 + I_3 = \frac{6}{24} + \frac{46}{24} - \frac{V_C}{6} - \frac{V_C}{18} = \frac{46}{24} + \frac{46}{24} - \frac{V_C}{4} - \frac{V_C}{18}$$

$$I_2 = \frac{46}{12} - \frac{5V_C}{36}$$

$$I_2 = \frac{46}{12} - \frac{5V_C}{36}$$

$$I_2 = \frac{46}{12} - \frac{5V_C}{36}$$

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$$I_2 = \frac{46}{12} - \frac{5V_C}{36}$$

$$I_2 = \frac{46}{12} - \frac{5V_C}{36}$$

$$I_1 + I_3 = I_2$$

$$V_C = 4I_1 + 6I_3 = 8 \text{ V}$$

$$3I_2 + 6I_3 = 4I_3 = 0$$

$$-3I_1 - 3I_3 + 14 - 6I_3 = 14 - 3I_1 - 9I_3$$

$$I_1 = \frac{14 - 9I_3}{3}$$

$$I_1 = \frac{14 - 9I_3}{3}$$

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$$I_1 = \frac{14 - 9I_3}{3}$$

$$I_1 = \frac{14 - 9I_3}{3}$$

$$V_C = 4I_1 + 6I_3 = 8 \text{ V}$$

$$V_C = 4I_1 + 6I_3 = 8 \text{ V}$$

$$V_C = 4I_1 + 6I_3 = 8 \text{ V}$$

$$V_C = 4I_1 + 6I_3 = 8 \text{ V}$$

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$$V_C = 4I_1 + 6I_3 = 8 \text{ V}$$

$$V_C = 4I_1 + 6I_3 = 8 \text{ V}$$

$$V_C = 4I_1 + 6I_3 = 8 \text{ V}$$

$$V_C = 4I_1 + 6I_3 = 8 \text{ V}$$

$$V_A \begin{cases} 2I_2 - 8 + 4I_4 = \frac{126}{22} - 8 + \frac{152}{22} = \frac{106}{22} = 4.63 \text{ V} \\ -6I_1 + 15 = 15 - \frac{126}{22} = \frac{106}{22} = 4.63 \text{ V} \\ 2I_3 + 4I_4 = \frac{152}{22} = 6.63 \text{ V} \end{cases}$$

$$4I_4 = \frac{152}{22} = 6.63 \text{ V}$$

$$V_B \begin{cases} -2I_3 - 6I_1 + 15 = \frac{15}{22} - \frac{126}{22} + 15 = \frac{112}{22} = 5.09 \text{ V} \\ 3 - 2I_2 - 6I_4 + 15 = 8 - \frac{126}{22} - \frac{152}{22} + 15 = \frac{112}{22} = 5.09 \text{ V} \end{cases}$$

$$I_1 = 4.63 \text{ mA}$$

$$I_3 = 6.63 \text{ V}$$

$$I_3 = 6.63 \text{ V}$$

$$15 - 6I_1 - 2I_3 - 4I_4 = 0 \quad 15 - 6I_1 - 2I_3 = 0$$

$$15 - 6I_1 - 2I_3 + 8 - 4I_4 = 0 \quad 15 - 6I_1 - 2I_3 = 0$$

$$15 - 6I_1 - 2I_3 - 4I_4 = 0 \quad 15 - 6I_1 - 2I_3 = 0$$

$$15 - 6I_1 - 2I_3 - 4I_4 = 0 \quad 15 - 6I_1 - 2I_3 = 0$$

Zerbröckeln, beste material halbleiten rechner, also halbleitend.

III Valenzen \Rightarrow Bor, Gallium

IV Valenzen \Rightarrow Germanium, Silizium

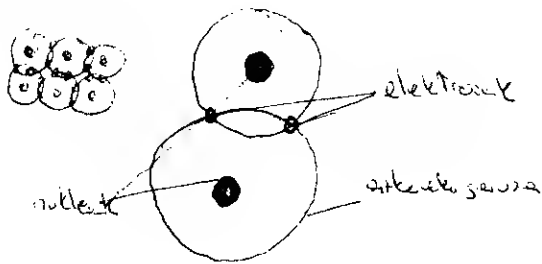
V Valenzen \Rightarrow Phosphor, Arsen, Antimon

VI Valenzen \Rightarrow Selen, Tellur

Alexander v. Humboldt
elektrische Kopie

Konpositum \Rightarrow $\text{GaAs} \Rightarrow$ Arseno Gallium

Elektrische Kristalle



Kristalle sind, bei einem Kristallpunkt, also bei einem Kristallpunkt, also bei einem Kristallpunkt, also bei einem Kristallpunkt.

\rightarrow Eigentlich bilden die Elektronen ein Kristallgitter, also ein Kristallgitter, also ein Kristallgitter, also ein Kristallgitter.

\rightarrow Letztlich kristallisiert das Zusammensetzen aus Kristallen, also aus Kristallen, also aus Kristallen, also aus Kristallen.

\rightarrow Temperatur ist absoluter Nullpunkt (0°K), elektrischer Kristall ist ein Kristall, also ein Kristall, also ein Kristall, also ein Kristall.

\rightarrow Temperatur normalbereich, elektrischer Kristall ist ein Kristall, also ein Kristall, also ein Kristall, also ein Kristall.

\rightarrow Große Energie haben elektrischer Kristall, also ein Kristall, also ein Kristall, also ein Kristall, also ein Kristall.

\rightarrow Elektrischer Kristall hat Kristallstruktur, also ein Kristall, also ein Kristall, also ein Kristall, also ein Kristall.

$n = p = n_i \rightarrow$ konzentrische Interaktion

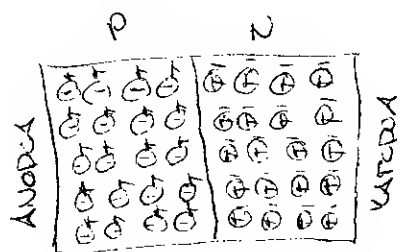
\downarrow Kristall

elektrischer Kristall

* Elektrischer Kristall ist ein Kristall, also ein Kristall, also ein Kristall, also ein Kristall.

→ Diffusionskorrektur: experimenten Konzentrationen abgleichen experimenten erzeugten Sättigung
Korrekturen Elektrische polare geordnete mit elektrischen Werten bezieht
einheit der Konzentration.

PN Lotura wo diode (Etwas elektrisch)



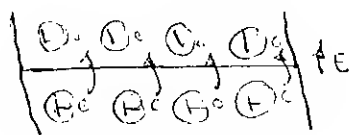
Diffusionskorrektur
Elektrische polare, ersten
potentiale.

$\left[\begin{smallmatrix} + \\ - \end{smallmatrix} \right] \Rightarrow$ experimenten triebener $\left. \begin{array}{l} + \Rightarrow \text{hohes} \\ - \Rightarrow \text{ist negativ} \end{array} \right\}$

$\left[\begin{smallmatrix} - \\ + \end{smallmatrix} \right] \Rightarrow$ experimenten potenter $\left. \begin{array}{l} - \Rightarrow \text{elektrisch} \\ + \Rightarrow \text{ist positiv} \end{array} \right\}$

Jetzt wenn normal elektrisch besteht, sollte es
dies. Man muss aber einen elektrischen Wert haben, der da
passen könnte. Diese Werte könnten? die da stehen.

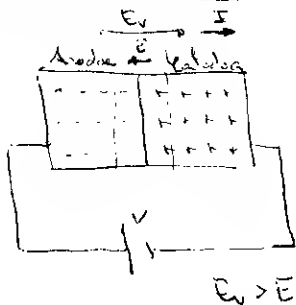
Depletion-... der... gemacht... geben
sich... da.



* Diffusionskorrektur
... es ...

Kontrolle... ist... da, ... da ...
... da ...

Polarisation

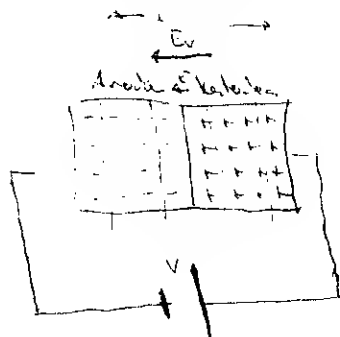


$E_v > E$

Wird polarisiert, durch die ...

- 1/ Elektrisch ...
- 2/ ...
- 3/ Elektrisch ...

Aldeantike polarisation

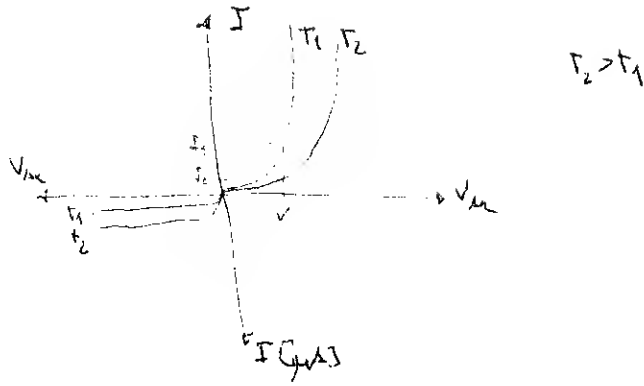


Wird polarisiert, durch die ...

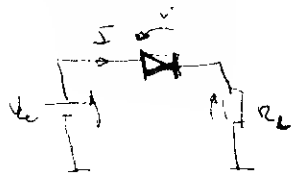
Sollte ...

- 1/ ...
- 2/ ...
- 3/ ...

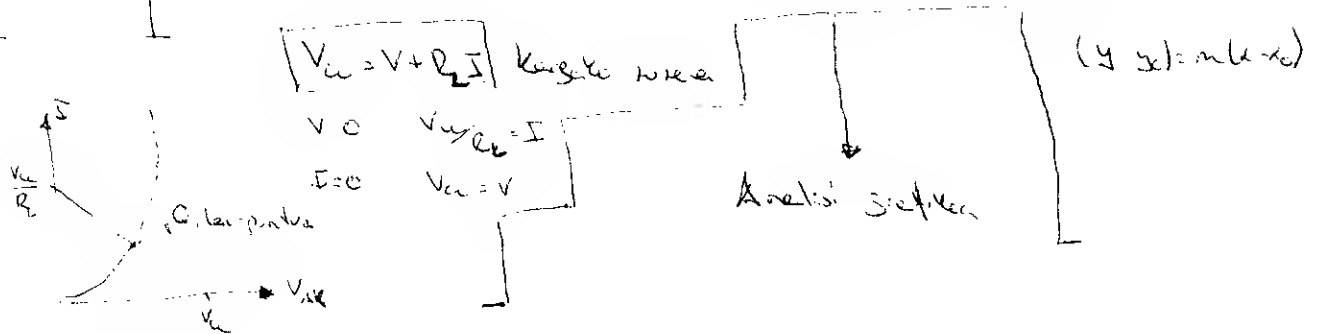
... da ...



Kärgke turen. Q-ten-pintunen keltua grafiikka:



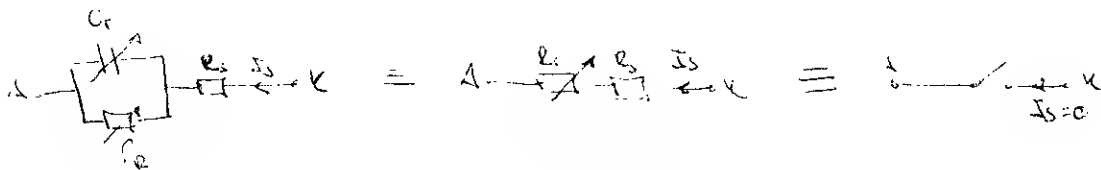
$Q[V_A, I_s] \rightarrow$ testin diä korntes diäden riktulu heretan



$$\begin{cases} I = I_s (e^{\frac{V}{V_T}} - 1) \\ V_AK - V - R_L I = 0 \end{cases} \quad \text{Anali: metenotika}$$

Diäden riktulu balokiden

\rightarrow Aläentit polinotitk olgoren

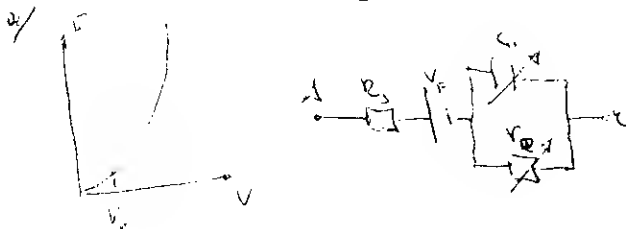


$C_T \rightarrow$ kappale dinnitk Aläentit polinotitk. Balok 3 tinnit

$R_L \rightarrow$ Aläentitk resisten dinnitk. $> 1 M\Omega$

$R_D \rightarrow$ Diänt, notenitk, gvan resistenitk $\approx R$.

\rightarrow Zuren polinotitk olgoren



$R_D \rightarrow$ notenitk dinnitk kettitk.

$V_P \rightarrow$ Aläentitk dinnitk.

$C_D \rightarrow$ kappale dinnitk kettitk kettitk.

$R_L \rightarrow$ Resistenitk dinnitk kettitk kettitk.

EA = 0.12

$V_A > V_K + V_F$ dann absolute die D_1 an position.

$V_A > V_K$ $I_1 = 1.92A$

$I_1 = 15.32V - 12.5V$

$I_2 = \frac{50.32 - 4V}{0.32}$

$I_2 > 1.92A \Rightarrow D_1 \text{ on } D_2 \text{ on}$



$I_1 + I_2 = I_L$

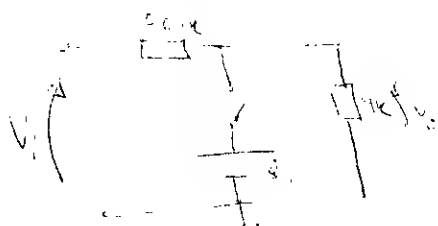
$V_A - 0.64I_1 = 0.64I_2 = 8V$

$V_A - 0.64I_1 = 15.32V$

$V_O = V_A - 0.64I_1 = 0.64V = 1.5V$

$I_1 < 1.92A \Rightarrow I_2 \leq 0$

$I_2 = \frac{32.32 - 4V}{0.32} \leq 0 \Rightarrow V_A \geq 8V$



$V_A - V_K = 4V = 0.99V$

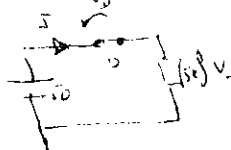
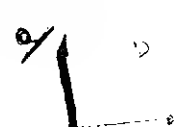
Schaltzustand Tabelle

V_A	V_K	I_1	I_2	I_L
1.92V	0.64V	1.92A	0A	1.92A
8V	8V	0A	1.92A	1.92A
15.32V	15.32V	0A	1.92A	1.92A

D OFF \Rightarrow D ON $\Rightarrow V_A > V_K + V_F$

D ON \Rightarrow D OFF $\Rightarrow I \leq 0$

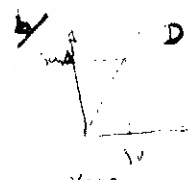
I, V_A, V_K, P_D ? Kalkulation absoluter Leistungswerte bei verschiedenen Lasten.



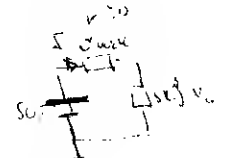
$I = \frac{V}{R} = \frac{50V}{5\Omega} = 10mA$

$V_D = 0$

$V_L = 50V$ $I = 10mA$ $P_D = 0W$



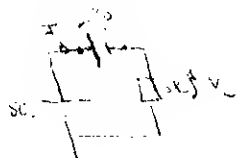
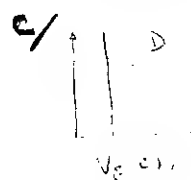
$r_F = \frac{1}{0.5A} \cdot 2\Omega = 0.004\Omega$



$I = \frac{50V}{5\Omega} = 10mA$

$V_D = 0.64V$ $I = 10mA$ $P_D = 0.0064W$

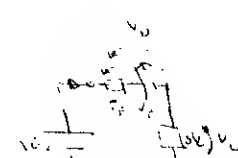
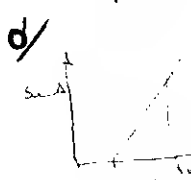
$V_L = 50V - 0.64V = 49.36V$



$I = \frac{50V}{5\Omega} = 10mA$

$V_D = 0.64V$

$V_L = 50V - 0.64V = 49.36V$

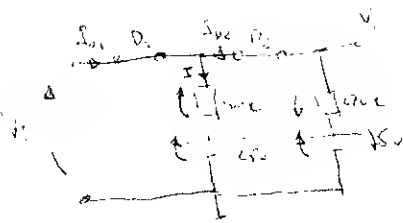


$I = \frac{50V}{5\Omega} = 10mA$

$V_D = 0.64V$ $I = 10mA$ $P_D = 0.0064W$

$V_L = 50V - 0.64V = 49.36V$

$r_F = \frac{1}{0.5A} \cdot 2\Omega = 0.004\Omega$



$$I_{D1} + I_{D2} = I$$

$$V_i - 50I - 25 = 0$$

$$V_i + 220I_{D2} - 75 = 0$$

$$I = \frac{V_i - 25}{50}$$

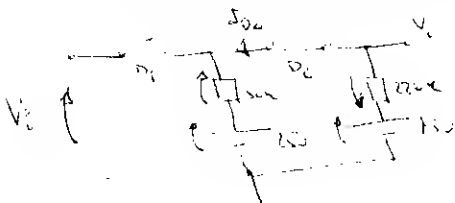
$$I_{D1} = 0 \text{ (ausgesagt)}$$

$$I_{D2} = \frac{75 - V_i}{220}$$

folgende Werte V_i oder V_o lassen sich aus beiden Gleichungen berechnen, beachte $V_i = V_o$ also, es muss konsistent liegen + kontrolliert werden

$$D_1 \text{ ON} \rightarrow D_2 \text{ OFF} \rightarrow I_{D1} > 0$$

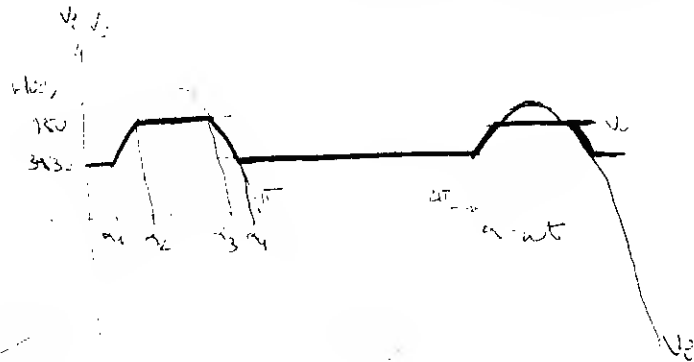
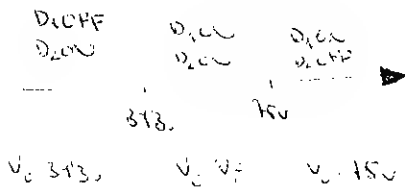
$$\text{ausgesagt: } I_{D2} = 0 \Rightarrow V_i \leq 31,3 \text{ V}$$



$$250 + 150I_{D2} + 220I_{D2} - 75 = 0$$

$$\frac{50}{270} = I_{D2} = 0,185 \text{ A}$$

$$V_o = 220I_{D2} + 75 = 220 \cdot 0,185 + 75 = 31,3 \text{ V} = V_i$$

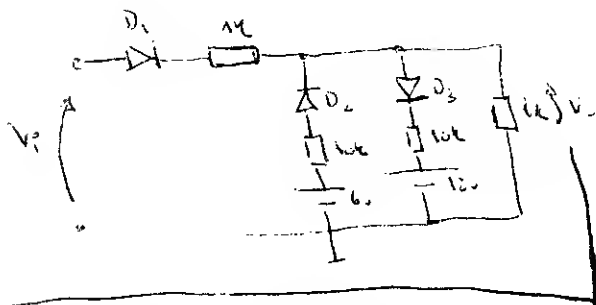


$$V_i = 100 \text{ s; } \omega_1 = 31,3 \rightarrow \omega_1 = \omega \cdot \frac{31,3}{100}$$

$$\omega_1 = \pi \cdot \frac{1}{2}$$

$$100 \text{ s; } \omega_2 = 75 \rightarrow \omega_2 = \omega \cdot \frac{75}{100}$$

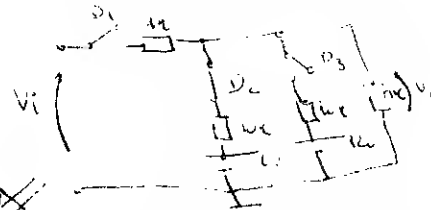
$$\omega_3 = \pi - \omega_2$$



$$V_o = f(V_i)? \quad V_i = \infty \rightarrow V_o = \infty$$

Detailwerte

$$V_i < 6 \Rightarrow D_1 \text{ OFF, } D_2 \text{ ON, } D_3 \text{ OFF}$$

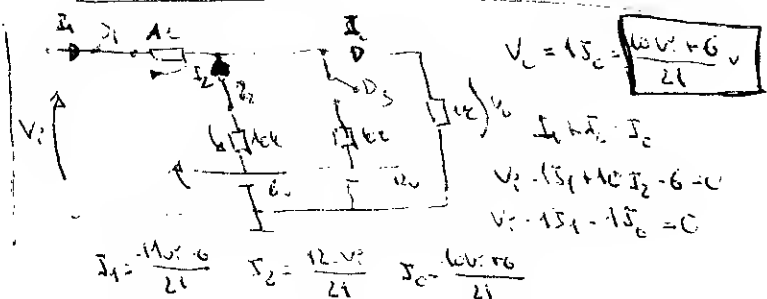


$$V_o = \left(\frac{6}{16+1} \right) \cdot 1 = \frac{6}{17} \approx 0,35 \text{ V}$$

V_i absteigend, wobei V_o gleich bleibt, D_2 oder D_3 steuert andere gegen absteigende D_1 ON gegen bleiben im hängenden Zustand. Restzeit, konstante wartende Zeit.



$$\text{Den: } V_o > V_{D1} \text{ oder } V_i > V_o = 0,35 \text{ V}$$



$$V_o = 15I_2 = \frac{10V_i + 6}{21}$$

$$I_1 + I_2 = I_c$$

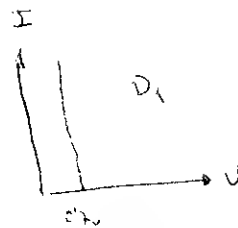
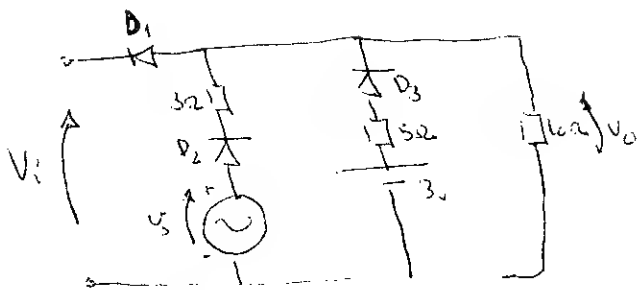
$$V_i - 15I_1 + 10I_2 - 6 = 0$$

$$V_i - 15I_1 - 15I_2 = 0$$

$$I_1 = \frac{10V_i - 6}{21}$$

$$I_2 = \frac{12V_i}{21}$$

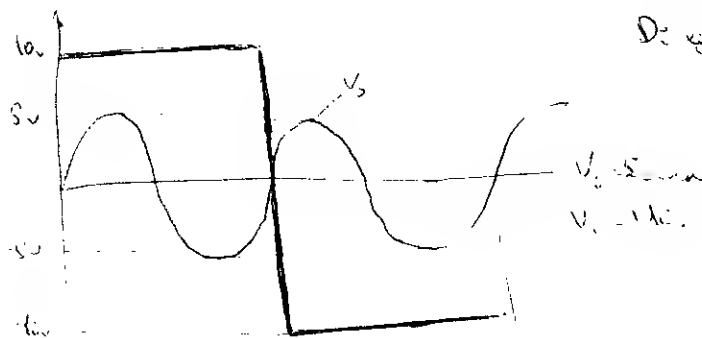
$$I_c = \frac{10V_i - 6}{21}$$



D_2, D_3 ideal

$$V_o = f(V_s, V_s)$$

D_1 given $\begin{cases} V_o = 10V \\ V_s = 10V \end{cases}$

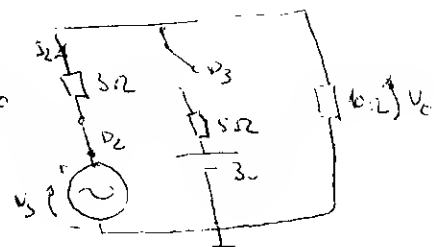
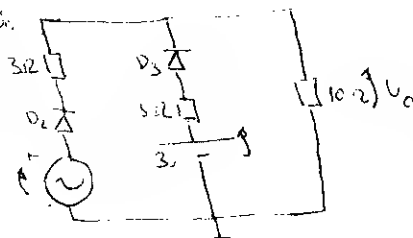


basierend auf der simplifizierten Schaltung

$V_s = +10V \Rightarrow D_1 \text{ OFF}, D_2 \text{ ON}, D_3 \text{ OFF}$

$V_s > 3V$

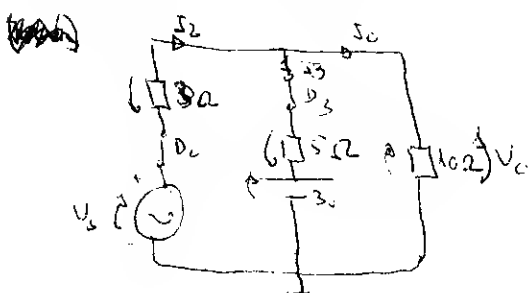
$$V_o = \left(\frac{V_s}{10+3} = \frac{V_s}{13} \right) \cdot 10 = \frac{10V_s}{13}$$



$D_2 \text{ ON} \Rightarrow D_2 \text{ OFF} \Rightarrow I_2 \leq 0 \Rightarrow \frac{V_s}{13} \leq 0 \Rightarrow V_s \leq 0$

$D_3 \text{ OFF} \Rightarrow D_3 \text{ ON} \Rightarrow V_A > V_K + V_F \Rightarrow 3V > \frac{10V_s}{13} \Rightarrow \frac{39}{10} > V_s \Rightarrow 3.9V > V_s$

$3.9V > V_s \Rightarrow D_2 \text{ ON}, D_3 \text{ ON}$



$$\begin{aligned} I_o &= I_2 + I_3 \\ V_s &= 3I_2 - 10I_2 = 0 \\ V_s &= 3I_2 + 5I_3 \cdot 3 = 0 \end{aligned}$$

$$I_2 = \frac{3V_s \cdot 6}{19}$$

$$I_3 = \frac{1}{5} \cdot \frac{6V_s \cdot 12}{57}$$

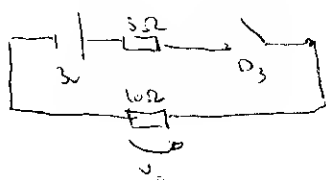
$$I_o = \frac{5V_s + 9}{95}$$

$$V_o = 10 \cdot I_o = \frac{10V_s + 18}{19}$$

$D_2 \text{ ON} \Rightarrow D_2 \text{ OFF} \Rightarrow I_2 \leq 0 \Rightarrow \left(\frac{1}{5} \cdot \frac{6V_s \cdot 12}{57} \right) \leq 0 \Rightarrow V_s \leq 0$

$$\frac{3V_s - 6}{19} \leq 0 \Rightarrow V_s \leq 2$$

$2 \geq V_s \geq 0 \Rightarrow D_2 \text{ OFF}, D_3 \text{ ON}$



$$V_o = \left(\frac{3}{5+10} \right) \cdot 10 = 2V$$

$D_1 \text{ OFF}$	$D_1 \text{ OFF}$	$D_1 \text{ OFF}$
$D_2 \text{ ON}$	$D_2 \text{ ON}$	$D_2 \text{ OFF}$
$D_3 \text{ OFF}$	$D_3 \text{ ON}$	$D_3 \text{ ON}$
2	3.9	
$V_o = 2V$	$V_o = \frac{10V_s + 18}{19}$	$V_o = \frac{10V_s}{13}$
	$V_o = \frac{5V_s + 18}{19}$	$V_o = \frac{5V_s + 18}{13}$

BATERBATERE BALJOA ETA BALJO EFIKAZA

Baterbateren baljoa $\Rightarrow S_{ac} = \frac{1}{T} \int_0^T s dt \cdot \frac{1}{2\pi} \int_0^{2\pi} s d\alpha$

Seinale periodikoa
ezartzen da

Baljo efikazia $\Rightarrow S_{ec} = \sqrt{\frac{1}{T} \int_0^T s^2 dt} = \sqrt{\frac{1}{2\pi} \int_0^{2\pi} s^2 d\alpha}$

$S_{ec} \geq S_{ac}$

Seinale konstante baten $S_{ec} = S_{ac}$

Bisnuzaren
sinusoide baten $\alpha = \omega t = 2\pi f t$

$S_{ec} \Rightarrow$ rms (root mean square)

(valor medio cuadrático)

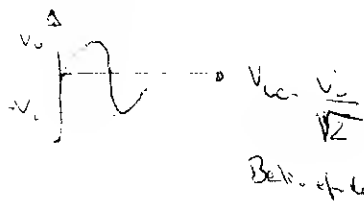
Erabilera

Baljo efikazia $\Rightarrow P = R I_{ec}^2 = V_{ec} \cdot I_{ec}$

Baterbateren baljoa $\Rightarrow \frac{1}{I_{ec}} \Rightarrow P = V_{ec} \cdot I_{ec}$

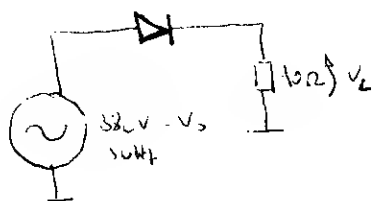
! berberak baten baten baljoa baten
alternatiboki erreferentzia egiten, baljo
efikazia konstante ar da, baten baljo
nahastu.

Seinale alternatibaren baterbateren baljoa 0 da.



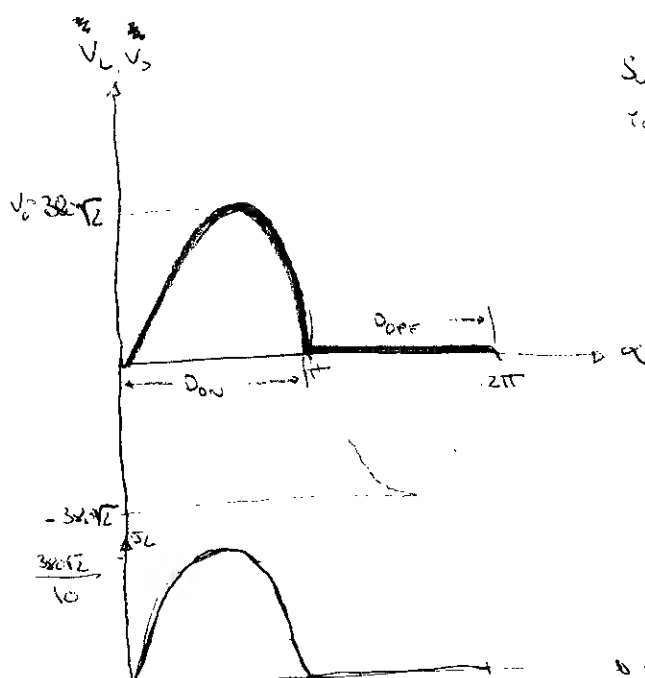
$V_0 = 220 \cdot \sqrt{2}$ Seinale alternatibaren baljo efikazia

ANÁLISI TECHIKOA



Diodea jiskatua artetu
eta azkeneko diodea kalkulatu
ere. V_{dc} , V_{ec} , I_{dc} , I_{ec} .

$P_D = V_{ec} I_{dc} + r_F \cdot I_{dc}^2$



Seinalea hasieratik, diodea
idazten da.

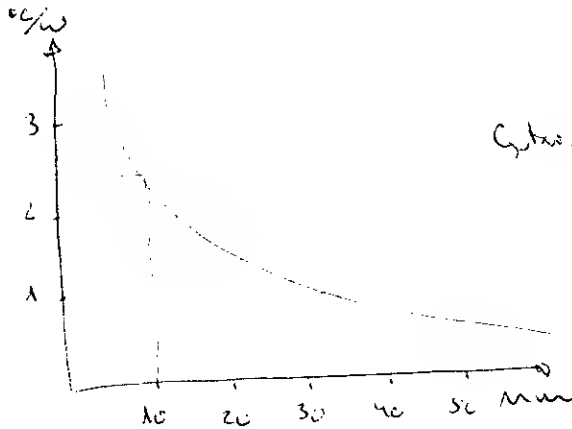
$V = RI$
 $I = \frac{V}{R}$

$$\theta_{TH24} = \frac{T_J - T_A}{P_D} = \theta_{TH25} + \theta_{TH68} = \frac{150^\circ\text{C} - 60^\circ\text{C}}{22.5\text{W}} = 2^\circ\text{C/W} + 1^\circ\text{C/W} = \boxed{3^\circ\text{C/W}}$$

Erred. edreen
eres:sterhu.Fenik
men ncu.

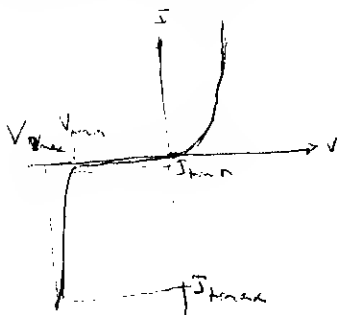
! Enadha negatib
itengaw. paktid
hwa disipateen enentia.
dela esen nchid.

Enadhae - profile - eske digu.

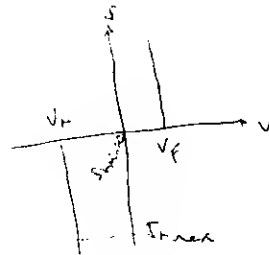


Gutuz a beka loma beka digu.

HAUSTURAKO DIODAK EDC ZENERAK



Dioda re nakt V_{max} za beltnean apuntu egiten dira, bere I_{max} k funktioatzen
jardueran dute, bako horietan a e funktioatzen prestatuta dute.



! Funktioatzen
simplifikatua

! Zener re en disipateen, bere eginkorra V_R konstante
mentratzen da.

$$P_{max} = V_{max} \cdot I_{max}$$

HAUSTURAKO DIODAK ZENER EFETUAREN ERAGINER

Zener Zenerak. berea handi egon jardueran dute, leku kobalitatek lotura inguruan beko egiten dira
een elektrikoaren egoniet etatearek elektro etatearek askatzen dituzte, korrontea
hazten du.

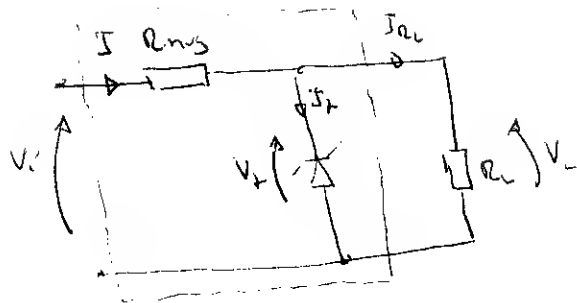
Efektua ber zener Zenerak 60 beko funktioatzen dena dute eta enentia.

HAUSTURAKO DIODAK ZENER ELURAKO (ABSURAK) EFETUAREN ERAGINER

Dioda re naktan enentia den efektua beko, berea beko potentia hwa disipateen prestatuta
dute eta enentia positiboa bekoatzen dute.

Zener Zenerak 60 beko handi egon dena dute eta enentia.

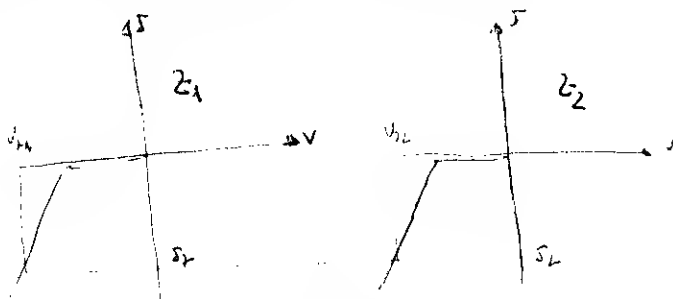
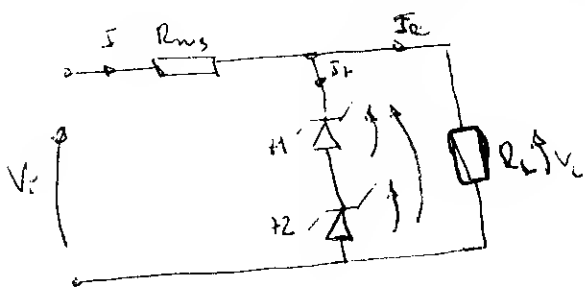
$$I_{RL} = \frac{V_R}{R_L}$$



$$R_{\text{ges}} = \frac{V_{\text{in}} - V_{\text{out}}}{I_{\text{L}} + I_{\text{ges}}} \Rightarrow \text{Erregelkreis ergatterte}$$

$$R_{\text{mg, min}} = \frac{V_{\text{res}} - V_{\text{res}}}{I_{\text{p}} + I_{\text{a, mg}}} \Rightarrow \text{Erreichte}$$

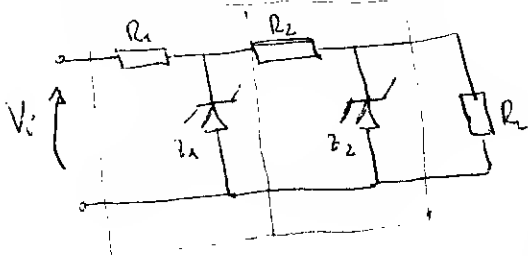
ETAPA BATUK HIKUTU UGUNGEMASLEAK DISEA BAT BATUK GEMILAK.20KW



! V_L belandaan pene bakerna juri generate, bener korrel salah
aditaku wku, per korante klttate ke kurngu kerna itng.
Hara: dikan eter, hube dugu b' pene gntren.

$$V_L = V_{L1} + V_{L2}$$

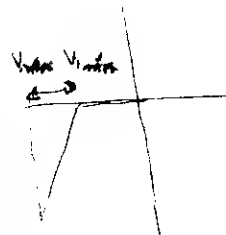
BT ETAPAKO EGONKORTASUNAK



$V_{1,1} \gg V_{2,2}$ Hence

Bestele en ab gy. kosten

Lehrer: deputat Unterarten
der seiner bestimmte
genau er ist den.



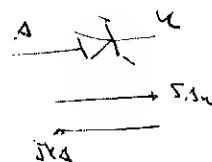
OWARRA

Transistor OFF \Rightarrow Transistor ON L.P $\Rightarrow V_a > V_k + V_f$

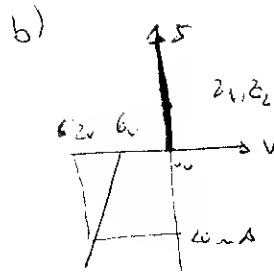
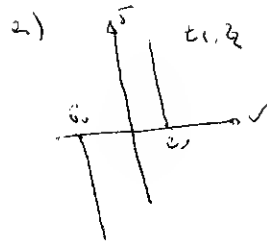
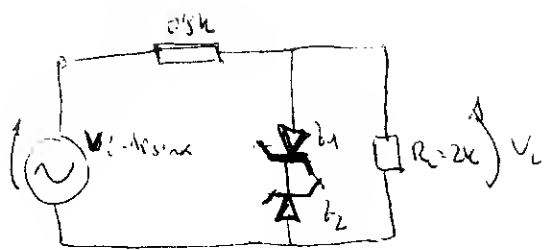
Levee ON \Rightarrow Levee OFF $\Delta P. \Rightarrow S_A u \leq 0$

2OFF \Rightarrow 2ON AP $\Rightarrow V_k > V_A + V_F$

$\downarrow \text{CN} \Rightarrow \downarrow \text{CFF} \quad \text{A.P.} \Rightarrow S_{\text{CN}} \leq 0$

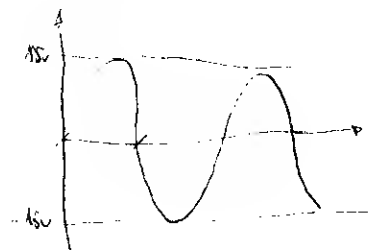


! Gungu ditugus, ariketeken Ihun = 0
berada habudo Jugu Ihun = 0
Gungu Jugu.



$v_L = f(\omega t)?$

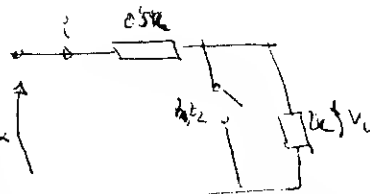
▼ Hier zu der richtigen Ergebnistabelle...



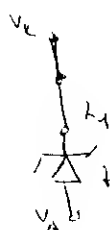
b_1 oder b_2 OFF

$v_i < ?$

$v_i = 15 \sin \omega t$



$$v_L = \left(\frac{v_i}{0.5 + 2} \right) \cdot 2k = \frac{2}{2.5} v_i = \frac{30}{2.5} \sin \omega t = 12 \sin \omega t$$



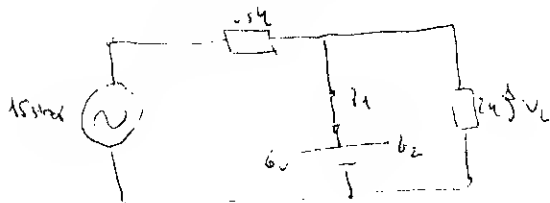
b_2 OFF \Rightarrow i_{L2} ON AP. $\Rightarrow v_L > v_{A1} + v_{A2} \Rightarrow v_L > 0 + 6 \Rightarrow v_L > 6V$

$v_L > v_{A1} + v_{A2}$

i_{L1} ON AP	i_{L2} OFF	i_{L1} ON AP
i_{L2} ON AP	i_{L2} OFF	i_{L1} ON AP
i_{L1} ON AP	i_{L2} OFF	i_{L1} ON AP

$v_L = 6V$ $v_L = 12V$ $v_L = 6V$

$v_i > 7.5V$ i_{L1} ON AP, b_2 ON AP



▼ Kontinuierliche Kalkulationen
Bestimmte DGS etc. RSP
liegen...

$15 \sin \omega t = 7.5$
 $12 \sin \omega t = 6$

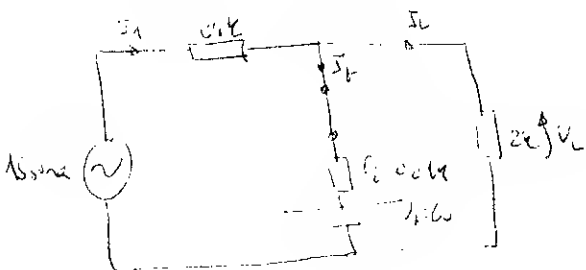
$\alpha_2 = \pi - \alpha_1$

$\alpha_3 = \pi + \alpha_1$

$\alpha_4 = 2\pi - \alpha_1$

b) Kasse

$i_T = \frac{0.2 \cdot 6}{0.6k} \cdot 1000 = 0.2A$ $v_T = 6V$



$i_1 = i_L + i_T$

$v_i = 0.5 i_1 - 0.5 i_T - 6 = 0$

$0 + 0.5 i_2 - 2 i_2 = 0$

$i_L = 0.15 \sin \omega t + 0.3 \Rightarrow v_L = 2 i_L = 0.35 \sin \omega t + 0.6$

i_{L1} ON AP	i_{L2} OFF	i_{L1} ON AP
i_{L2} ON AP	i_{L2} OFF	i_{L1} ON AP

$v_L = 0.35 \sin \omega t + 0.6$ $v_L = 15 \sin \omega t$ $v_L = 0.35 \sin \omega t + 0.6$

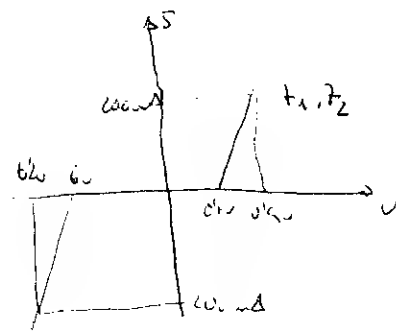
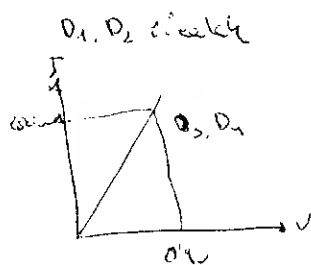
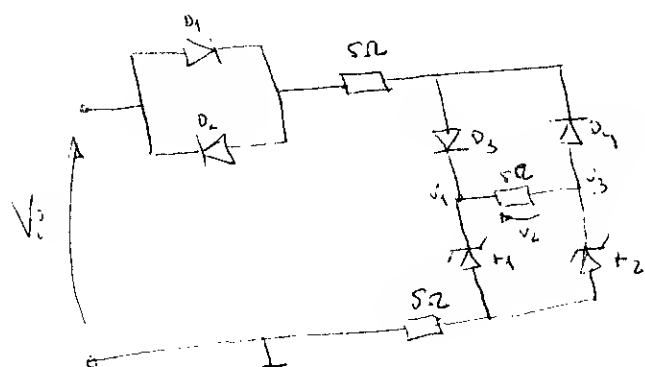
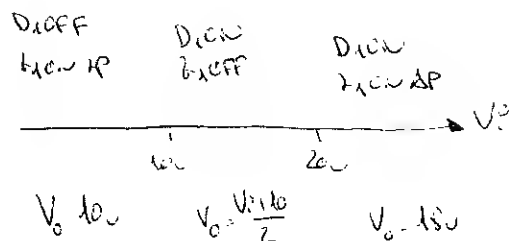
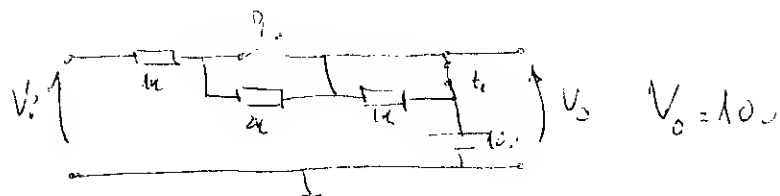
$v_L = 0.35 \sin \omega t + 0.6$ $v_L = 15 \sin \omega t$ $v_L = 0.35 \sin \omega t + 0.6$

$$D_{1ON} \Rightarrow D_{1OFF} \Rightarrow S \leq 0 \Rightarrow \frac{V^2 - 10}{2} \leq 0 \Rightarrow \boxed{V^2 \leq 10}$$

$$t_{1OFF} \Rightarrow t_{1ON \text{ h.p.}} \Rightarrow V_A > V_C + V_{FE} \Rightarrow V_A > V_C \Rightarrow V_A - V_C > 0 \Rightarrow -1I = \frac{10 - V^2}{2} > 0 \Rightarrow V^2 < 10$$

$10 > V^2$

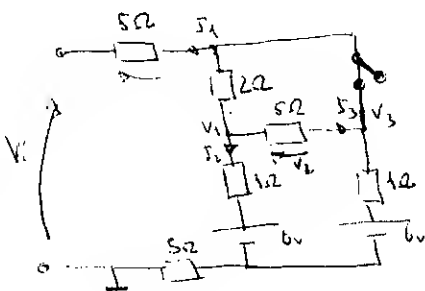
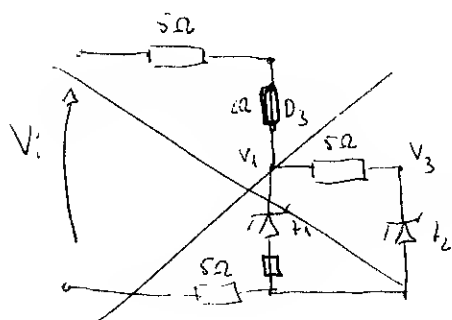
$D_{1OFF}, t_{1ON \text{ h.p.}}$



$$D_3, D_4 \Rightarrow r_F = \frac{0.4}{0.2} = 2\Omega \quad t_1, t_2 \Rightarrow V_F = 0.7 \quad r_F = \frac{0.4 - 0.7}{0.2} = 1.5 \quad V_i = 6 \quad r_F = \frac{6 - 6}{0.2} = 1\Omega$$

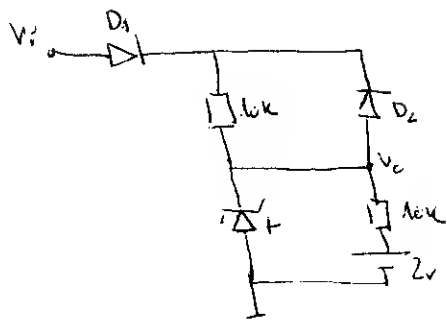
► D_1 et D_2 directs, identifiante, en tête
logique protection. Bases, antenne
ordon, vers antenne.

$$V_i > 6 \Rightarrow D_3 \text{ ON}, D_4 \text{ OFF}, t_1 \text{ ON h.p.}, t_2 \text{ ON h.p.}$$



$$\begin{aligned} I_1 &= I_2 + I_3 \\ V_i - (3 + 5 + 2)I_1 - 1I_2 - 6 &= 0 \\ 6 + 1I_2 - (5 + 1)I_3 - 6 &= 0 \\ I_1 &= \frac{7V_i - 42}{90} \quad I_2 = \frac{V_i - 6}{15} \quad I_3 = \frac{V_i - 6}{90} \end{aligned}$$

$$\begin{aligned} V_A &= 5I_1 + 1I_2 + 6 = \frac{41V_i + 254}{90} \\ V_B &= 5I_1 + 1I_3 + 6 = \frac{36V_i + 324}{90} \\ V_C &= V_A - V_B = \frac{5V_i - 30}{90} \end{aligned}$$



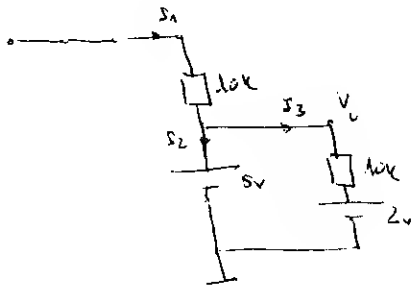
D_1, D_2 ideal

\Rightarrow ideal

$$V_T = 5V$$

$$V_o = f(V_i)?$$

$V_i \uparrow \uparrow$ D_1 ON, D_2 ON AP, D_2 OFF



$$\begin{cases} V_o \leq 10I_2 + 2V \\ I_1 = I_2 + I_3 \\ V_o \leq 10I_1 + 5 = 0 \end{cases}$$

$$V_o = 5V$$

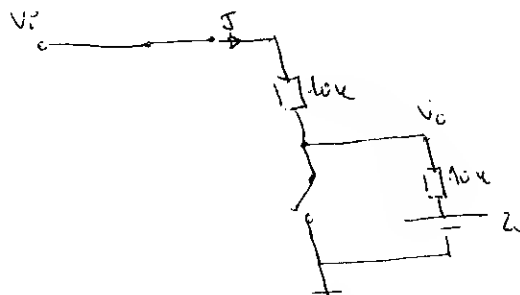
$$D_1 \text{ ON} \Rightarrow D_1 \text{ OFF} \Rightarrow I_1 \leq 0 \Rightarrow V_i \leq 5V$$

$$\Downarrow \\ \frac{V_i - 5}{10}$$

$$D_2 \text{ ON AP} \Rightarrow D_2 \text{ OFF} \Rightarrow I_2 \leq 0 \Rightarrow \cancel{V_i \leq 5V} \quad I_2 = I_1 - I_3 = \frac{V_i - 5}{10} - \frac{5 - 2}{10} = \frac{V_i - 8}{10} \leq 0 \Rightarrow \boxed{V_i \leq 8V}$$

$$D_2 \text{ OFF} \Rightarrow D_2 \text{ ON} \Rightarrow V_A > V_K + V_F^0 \Rightarrow \cancel{V_A \cdot V_K > 0} \Rightarrow -10I_1 > 0 \Rightarrow -V_i + 5 > 0 \Rightarrow V_i < 5V$$

$$? < V_i \leq 8V$$



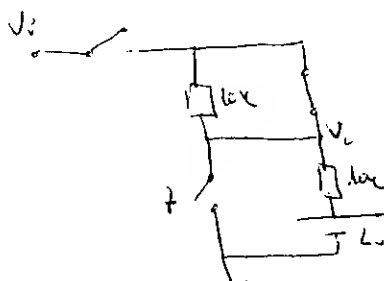
$$I = \frac{V_i - 2}{10 + 10} = \frac{V_i - 2}{20}$$

$$V_o = V_i - 10I = V_i - \frac{V_i - 2}{2} = \boxed{\frac{V_i + 2}{2}}$$

$$D_1 \text{ ON} \Rightarrow D_1 \text{ OFF} \Rightarrow I \leq 0 \Rightarrow \frac{V_i - 2}{20} \leq 0 \Rightarrow V_i \leq 2V$$

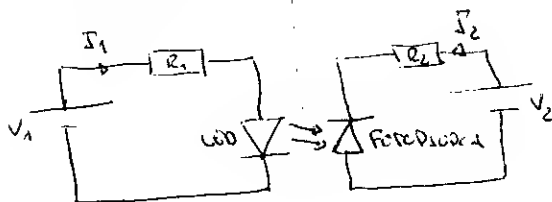
$$D_2 \text{ OFF} \Rightarrow D_2 \text{ ON} \Rightarrow V_A > V_K + V_F^0 \Rightarrow \frac{V_i + 2}{2} > V_i \Rightarrow V_i + 2 > 2V_i \Rightarrow 2V > V_i$$

$$D_1 \text{ OFF} \Rightarrow D_1 \text{ ON AP} \Rightarrow V_A > V_K > V_F^0 \Rightarrow -V_o > 0 \Rightarrow \frac{-V_i - 2}{2} > 0 \Rightarrow V_i < -2V$$



$$V_o = 2V$$

$D_1 \text{ OFF}, D_2 \text{ OFF}$ z.p.


$$I_1 \uparrow \Rightarrow I_2 \uparrow$$

Lesen Sie kritisch den vorliegenden S_1 -etische
propositionale Aussage, basieren faktisch auf
geschätzten S_2 -ethiken.

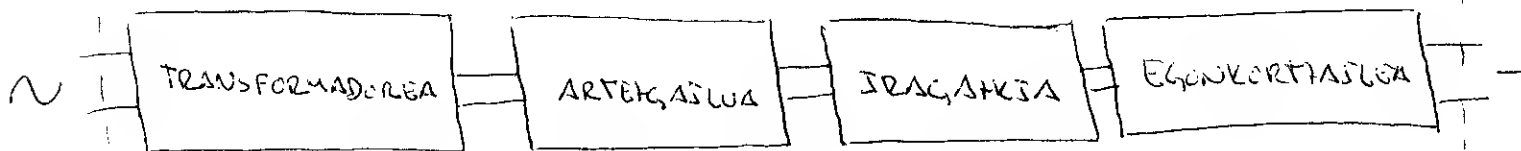
Fisika biyoloji barabara kullilnenda. Elektrik biyoloji gaban dnan hana.

LASER DISC



Argumentieren, lassen sich Ergebnisse eher anerkennen d.h. Applikation:
Kommunikation optimieren, Distanzreaktion vermeiden, Informationsstruktur abh.

ODNARZNIKE ELIZKATHE ITURRIA



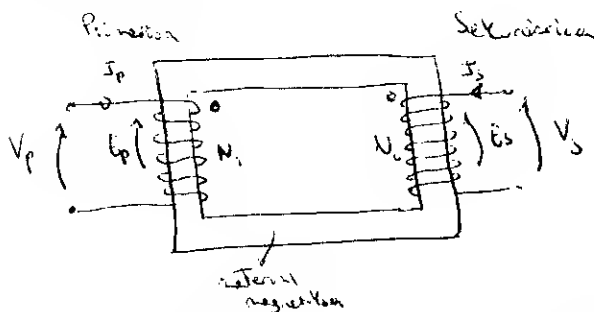
Tertius: een belic afstaken
alsdat zijten de, bouwe
alleen nu naderen.

Sevreden huset
lyfter du.

Seiner Kunstfertigkeit
bühnten d. v.

Errebet kunste,
 agurke. a b hunden
 dute orbees.

TRANSFORMADO 2EA



Transformed variables are given by

$$s = \frac{21}{22}$$

→ transformasi elektrik:
 voltase, arus, impedansi

eksplorasi primer
 eksplorasi sekunder

$$r_5 = \frac{V_1}{V_2}$$

$P_1 - P_2$

Stenotaphrum
potentilla

$$\rightarrow V_p \cdot I_p = V_s \cdot I_s \rightarrow \frac{V_p}{V_s} = \frac{I_s}{I_p}$$

- Bei positiv korrelieren Genderklassen
z.B. 1. Bsp. positiv korrelieren,
höherer, eine positive Korrelation, eine
negativ korrelieren bsp. 2.

! P. 4 ne. van secrete
weldat. de zuur
dan.

$$r_t = \frac{N_1}{N_2} = \frac{V_P}{V_S} = \frac{I_S}{I_P}$$

Bek: edukasi
kontrol kesehatan

I_N = Originalenergie ~~er~~ bei der effektiven.

Originalenergie, Kalkulation, FOURIERREKONSTRUKTION

$$i_{RL} = \frac{I_c}{\pi} + \frac{I_c}{2} \sin \alpha - \frac{2I_c}{3\pi} \cos 2\alpha - \frac{2I_c}{15\pi} \cos 4\alpha + \dots$$

$$i_{RL} = I_{LQ} + i_{RL} \sim \quad i_{RL} = i_{RL} - I_{LQ}$$

$$I_N = \sqrt{\frac{1}{2\pi} \int_0^{2\pi} (i_{RL})^2 d\alpha} = \sqrt{\frac{1}{2\pi} \int_0^{2\pi} (i_{RL} - I_{LQ})^2 d\alpha} = \sqrt{I_{LQ}^2 - I_{LQ}^2}$$

★

$$r = \frac{I_N}{I_{LQ}} = \frac{\sqrt{I_{LQ}^2 - I_{LQ}^2}}{I_{LQ}} = \sqrt{\frac{I_{LQ}^2 - I_{LQ}^2}{I_{LQ}^2}} = \sqrt{F^2 - 1} = \sqrt{1.07^2 - 1} = 1.21 \Rightarrow \% 121$$

DISKURSE

$$\begin{aligned} I_{DQ} = I_c = \frac{V_c}{r_f + R_c} &\Rightarrow I_{FRM} \\ I_{DQ} = I_{LQ} = \frac{I_c}{2} &\Rightarrow I_{FRMS} \\ I_{DQ} = I_{LQ} = \frac{I_c}{\pi} &\Rightarrow I_{FAV} \\ P_{DV} = V_c &\Rightarrow V_{REM} \end{aligned}$$

Haupt begründete diese durch sukzessive Reaktionen.

diskutiert
besten
medium.

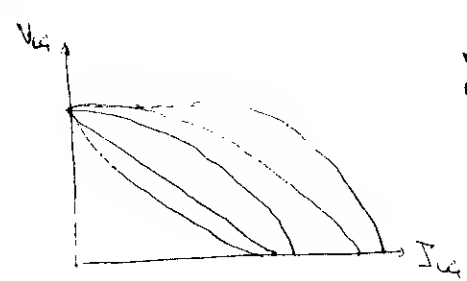
TRANSFORMIEREN

$$I_{RL} = I_c$$

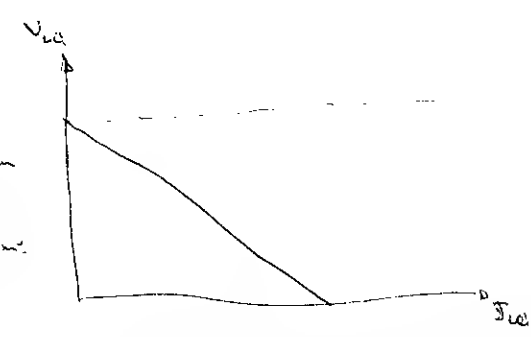
$$\begin{aligned} V_{sc} &= \frac{I_c}{\sqrt{2}} \\ V_{sq} &= 0 \\ V_{pc} &= r_f \cdot V_{sc} = \frac{N_1}{N_2} \cdot \frac{V_c}{\sqrt{2}} \\ V_{pq} &= r_f \cdot V_{sq} = 0 \\ I_{sc} &= I_{LQ} = \frac{I_c}{2} \\ I_{si} &= I_{LQ} = \frac{I_c}{\pi} \\ I_{pc} &= \frac{I_{sc}}{r_f} = \frac{I_c}{2} \cdot \frac{N_2}{N_1} \\ I_{pq} &= \frac{I_{sq}}{r_f} = \frac{I_c}{\pi} \cdot \frac{N_2}{N_1} \end{aligned}$$

! Folgende Werte müssen negativ sein
galvanisch hergeleitet. Aber system
der Auslieferung.
Wsk: Daten etc. nicht etc. direkt etc.
erhöht, oder besten erwidern.

ERREGULATIONS KURVEN



! Es ist ein so, jedoch gehen wir den
ferneren also. Konstanten ist werden
bester, besten gut. ist also
Haupt Parameter die Längen einer
Erregerkurve, Kapazität...



Simplifikation: Parameter so eingestellt
besten etc. ist besten

$$I_{LC} = \frac{1}{2\pi} \int_0^{2\pi} i_L d\alpha = \frac{1}{2\pi} \left[\int_0^{\pi} I_0 \sin \alpha d\alpha + \int_{\pi}^{2\pi} I_0 \sin(\alpha - \pi) d\alpha \right] = 2 \cdot \frac{1}{2\pi} \int_0^{\pi} I_0 \sin \alpha d\alpha = \frac{2I_0}{\pi}$$

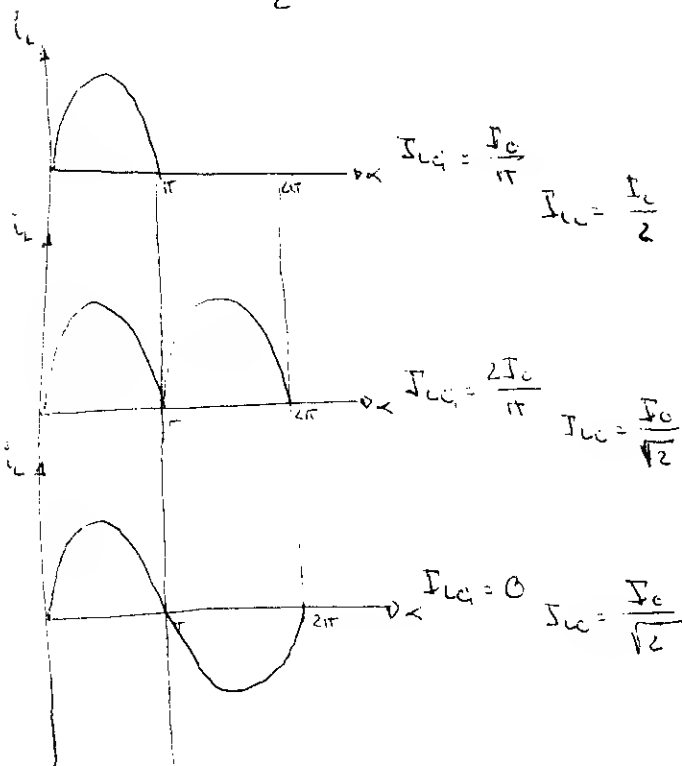
$$V_{LC} = I_{LC} R_L = \frac{2I_0}{\pi} R_L$$

$$P_{LC} = V_{LC} I_{LC} = \frac{4I_0^2}{\pi^2} R_L$$

$$I_{LC} = \sqrt{\frac{1}{2\pi} \int_0^{2\pi} i_L^2 d\alpha} = \sqrt{\frac{1}{2\pi} 2 \int_0^{\pi} I_0^2 \sin^2 \alpha d\alpha} = \frac{I_0}{\sqrt{2}}$$

$$V_{LC} = I_{LC} R_L = \frac{I_0}{\sqrt{2}} R_L$$

$$P_{LC} = V_{LC} I_{LC} = \frac{I_0^2}{2} R_L$$



↙ Batterbustekke bulis biko tume
↘ Bulis apikar $\sqrt{2}$ ulah + handingak

$$P_s = P_{D1} + P_{D2} + P_{LC} = 2P_{D1} + P_{LC} = 2I_F I_0^2 + R_L I_{LC}^2 = 2I_F \left(\frac{I_0}{2}\right)^2 + R_L \left(\frac{I_0}{\sqrt{2}}\right)^2 = \frac{I_0^2}{R_L} (I_F + R_L)$$

$$\eta_i = \frac{P_{LC}}{P_s} = \frac{\frac{4I_0^2}{\pi^2} R_L}{\frac{I_0^2}{R_L} (I_F + R_L)} = \frac{8}{\pi^2} = 0.81 \Rightarrow 81\%$$

$$\eta_c = \frac{P_{LC}}{P_s} = \frac{\frac{4I_0^2}{\pi^2} R_L}{\frac{I_0^2}{2} (I_F + R_L)} = \frac{8}{\pi^2} \left(\frac{R_L}{I_F + R_L} \right) < 0.81$$

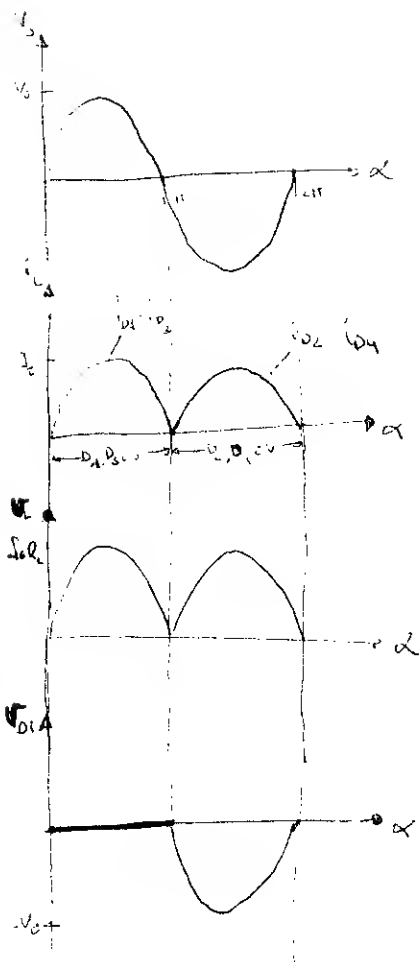
$$F = \frac{I_{LC}}{I_{LC}} = \frac{I_0/\sqrt{2}}{2I_0/\pi} = \frac{\pi}{2\sqrt{2}} = 1.11 (=) 111\%$$

$$F = \frac{I_{LC}}{I_{LC}} = \sqrt{F^2 - 1} \cdot \sqrt{111^2 - 1} = 0.48 (=) 48\%$$

▶ Jendat ete 0.48 bulisleg,
0.48 bulis hane

! Beste ulahen scintarekan
kalkulasi bulisleg pome
faktorek, nahin ete kase
konstante kase ete ete.

! Jendat ete 0.48 bulisleg,
0.48 bulis hane.



$$I_{Ld} = \frac{2I_0}{\pi} \quad V_{Ld} = R_L I_{Ld} = R_L \frac{2I_0}{\pi} \quad P_{Ld} = V_{Ld} \cdot I_{Ld} = \left(\frac{2I_0}{\pi} \right)^2 R_L = \frac{4I_0^2}{\pi^2} R_L$$

$$I_{Lc} = \frac{I_0}{\sqrt{2}} \quad V_{Lc} = R_L I_{Lc} = \frac{I_0}{\sqrt{2}} R_L \quad P_{Lc} = V_{Lc} I_{Lc} = \frac{I_0^2}{2} R_L$$

$$P_s = P_{D1} + P_{D2} + P_{D3} + P_{D4} + P_{Lc} = 4P_{D1} + P_{Lc} = 4I_{Fp} I_{D1}^2 + \frac{I_0^2}{2} R_L = 4I_{Fp} \left(\frac{I_0}{2} \right)^2 + \frac{I_0^2}{2} R_L = \frac{I_0^2}{2} (2I_{Fp} + R_L)$$

$$\zeta_c = \frac{P_{Lc}}{P_s} = \frac{\frac{4I_0^2}{\pi^2} R_L}{\frac{I_0^2}{2} (2I_{Fp} + R_L)} = \frac{8}{\pi^2} = 0.81 = 81\%$$

$$\zeta_c = \frac{P_{Lc}}{P_s} = \frac{\frac{4I_0^2}{\pi^2} R_L}{\frac{I_0^2}{2} (2I_{Fp} + R_L)} = \frac{8}{\pi^2} \frac{R_L}{(2I_{Fp} + R_L)} < 0.81$$

$$F = \frac{I_{Lc}}{I_{Ld}} = 1.11 = 111\%$$

$$r = \frac{I_{Lc}}{I_{Ld}} = 0.48 = 48\%$$

DIODEN

$$I_{D1} = I_0 = \frac{V_0}{2I_{Fp} + R_L} \quad I_{Dc} = \frac{I_0}{\pi} = \frac{I_{Ld}}{2} \quad I_{Dc} = \frac{I_0}{2} = \frac{I_{Lc}}{\sqrt{2}} \quad P_{D1} = V_0$$

ERREGULATOR KURZ

ERREGULATOR-PORTIONEN

$$V_{Lc} = V_{Ld0} - E_F I_{Lc} = \frac{2V_0}{\pi} - 2I_{Fp} I_{Lc}$$

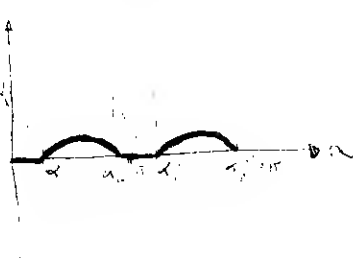
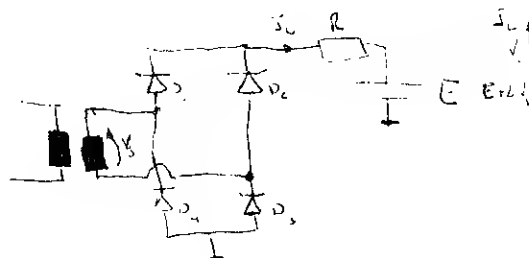
$$\% REG = \frac{V_{Ld0} - V_{Lc}}{V_{Ld0}} \cdot 100$$

! Elektronen können also
festen nicht zu finden

→ BATTERIE KAPAZITÄT - ARTREGULATOR ANWENDUNG BAT

C: in der elektronischen: nicht voll ausgenutzt. [V]

C: Kapazität. [A·h] Kapazität: \$I_{Lc} \cdot \Delta t\$

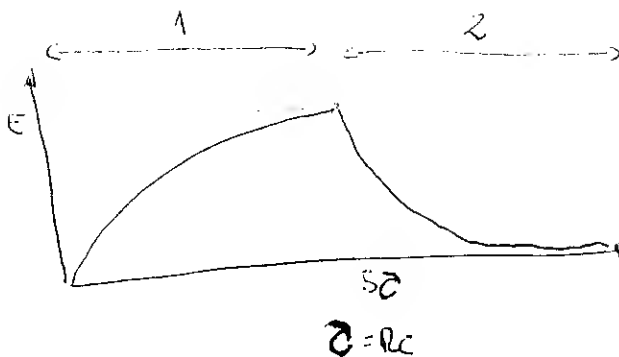
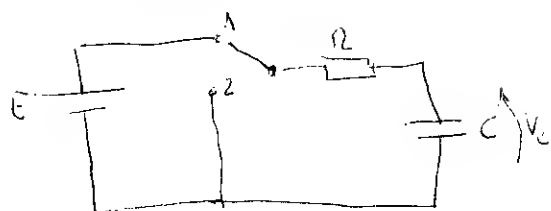


$$\alpha_1 < \alpha < \alpha_2 \quad i_L = \frac{V_0 - E - 2V_F}{R + 2I_{Fp}} = \frac{V_0 \sin \alpha - E - 2V_F}{R + 2I_{Fp}}$$

$$I_{Lc} = \frac{V_0 - E - 2V_F}{R + 2I_{Fp}}$$

$$V_0 \sin \alpha_1 = E + 2V_F \quad \alpha_1 = \arcsin \frac{E + 2V_F}{V_0}$$

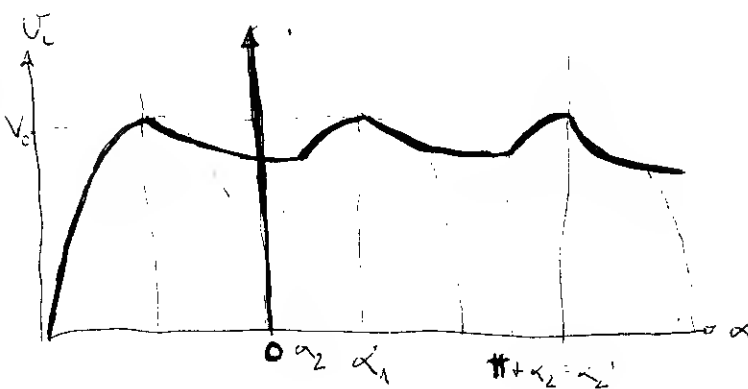
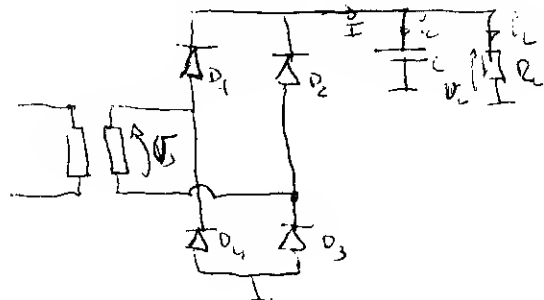
$$\alpha_2 = \pi - \alpha_1$$



$$i = e \frac{dv_c}{dt}$$

Verständnis von
Elektronen

→ KONDENTSSDORENK IRAGHAKSA



! Kenderbunde bei Ogden über-
brückte. Die neue Bundesstraße über-

$$V_c > V_s \Rightarrow D_1, D_3 \text{ OFF}$$

Bingung banget nih dlu

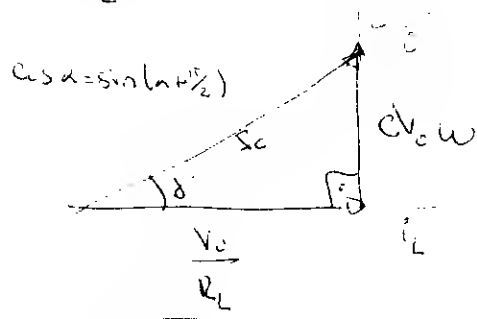
DRONDEK BREASTEN $\alpha_2 < \alpha < \alpha_1$

$$i = i_c + i_L \quad i_L = \frac{V_L}{R_L} = \frac{V_S}{R_L} = \frac{V_0 \sin \omega t}{R_L}$$

$$i = C \frac{dv_L}{dt} = C \frac{dv_S}{dt} = C \frac{d(V_0 \sin \omega t)}{dt}$$

$$C_w \frac{d(V_s \sin \omega t)}{dt} = C V_0 \omega \cos \omega t$$

$$i = \frac{V_c}{R_1} \sin \alpha + C V_c \omega \cos \alpha$$



$$I_c = \sqrt{\left(\frac{N_c}{R_c}\right)^2 + (C V_c \omega)^2}$$

$$T_{gr} = \frac{C V_{ow}}{V_w / R_i} \cdot C_w R_i$$

$$\delta = \arctan(\omega R_L)$$

$$i = I_0 \sin(\omega + \delta)$$

$$\alpha = \alpha_1 \Rightarrow \psi = 0 = \int_0^{\infty} \delta \psi(\alpha_1 + \gamma)$$


$$\sin(x_1 + \delta) = 0, \quad x_1 + \delta = \pi$$

$$\alpha_1 = \pi - \omega c \operatorname{tg}(\omega c \alpha_2)$$

28 10.1.1, 1.1

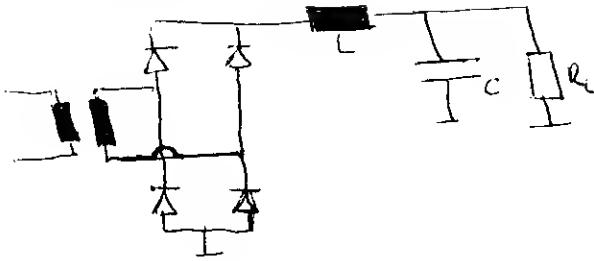
↳ Kostenträger, der je ein oder häufiger über, oder ein
Kostenträger, Menge in Sekunden, keine Kosten
ein handelte der. Hier die Kosten sind ein Produkt
Sachtinger Kosten der.

Дієдо АК блокується $\Rightarrow \alpha_1 < \alpha < \alpha_2$


 $U_L = U_L$

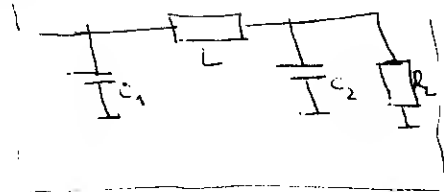
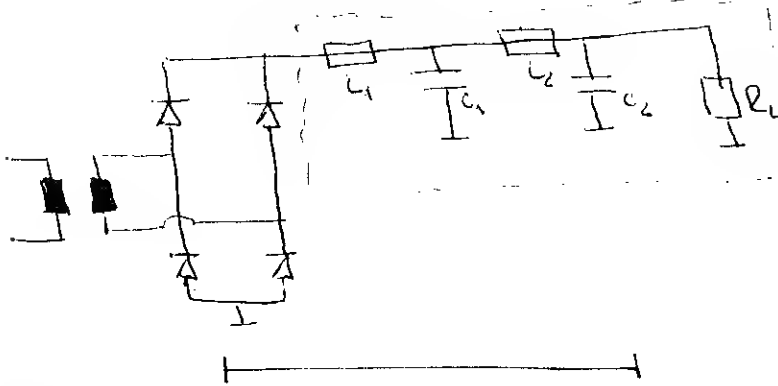
$$C = C \frac{\partial U_C}{\partial t} ; \quad \partial U_C = \frac{1}{C} i dt$$

$$\left. \begin{aligned} U_L &= \frac{1}{C} \int i dt \\ U_L &= R_L i \end{aligned} \right\} \frac{1}{C} \int i dt = R_L i$$

LC JERAGATKISA

$$r \approx \frac{\pi^2}{12} \frac{1}{\omega^2 LC}$$

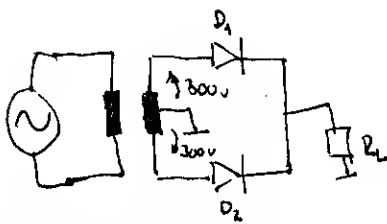
! R ren eagina gutxi gora behera jasentatu egiten da. Uhindura -mala berriak sortuko L eta C balioak altuko bango dira.

LC JERAGATKIS ANSTAK

Bitarteko harguerdin uhin osoko artengailu bat osagai idealtasun osoa dugu, eta transformadorearen sekundarioaren fase tentsioa $300\text{V}/50\text{Hz}$ da. Kalkulatu V_{L10} karga berri-
teeraren. V_{L1} irteerako korrontea 100mA itanik. Zer gertatzen da uhindura meharri: I_{L1} -k gora egiten bada? Dioden PIV tentsioa.

A/ Iragarkirik gabe

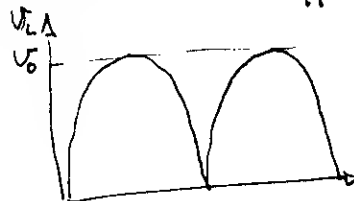
B/ Irteerari $10\mu\text{F}$ -ko kondentsadorea jartzen



! 300V balio efikam da.
 $V_0 = 300\sqrt{2}$

A kasua

$$! V_{L10} = \frac{2V_0}{\pi} = \frac{2 \cdot 300\sqrt{2}}{\pi} = \boxed{270\text{V}}$$



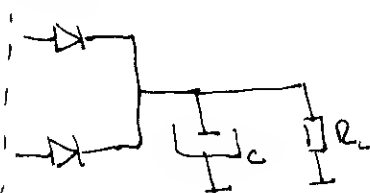
! Diodak idealtasun izanik, berdin dio kargarik egotea edo ez, erabaitago karga jarraitik. Beraz, $V_{L1} = V_{L10}$

$$\boxed{270\text{V}}$$

$$! \text{PIV} = 2V_0 = 2 \cdot 300\sqrt{2} = \boxed{848\text{V}}$$

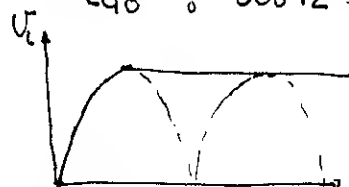
! Aipatutako baldintzak dirala medio, uhindura -mala berdin mantentzen da.

B kasua



$$! \text{PIV} = 2V_0 = 2 \cdot 300\sqrt{2} = \boxed{848\text{V}}$$

$$! V_{L10} = V_0 \cdot 300\sqrt{2} = \boxed{1424\text{V}}$$

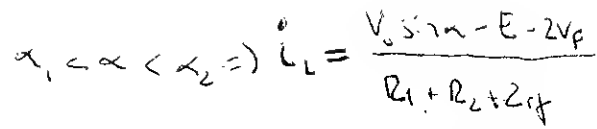


! Kargarik erdaguerat, diodak blokeatzen, kondentsadorea etxak des kargatzen, konstante mantentzen da.

$$! V_{L1} = V_0 - \frac{V_1}{2} \quad V_1 = \frac{I_{L1}}{2\pi C} = \frac{100 \cdot 10^{-3}}{2 \cdot 50 \cdot 10^{-6}} = 100\text{V}$$

$$V_{L1} = 300\sqrt{2} - \frac{100\text{V}}{2} = \boxed{374\text{V}}$$

! Uhindura -mala txarragoa, lasteragoa, itengo da I_{L1} -k gora gertean. Aurrera hutsuko da kondentsadorea korronteak gora gertean.



$$\alpha_1 = 6'54'' \Rightarrow \alpha_2 = \pi - \alpha_1 = 2'48''$$

$0.36 \rightarrow \%36$

Besteckungen: $V_{CC} = 150V$ $I_{CC} = 20mA$ $r = 0,1 \Omega$

-

